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MOMPER, ANNA M	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,336	BRUNETIERE, BENOIT	
	Examiner	Art Unit	
	ANNA MOMPER	3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-11 and 13-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2, 4-11, 13-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Amendment to the claims received 2/18/2009. Claims 1-2, 4-11, 13-24 have been amended. Claims 3 and 12 have been canceled.

2. The amendments to the claims have been found to overcome the previously made rejections under 112, 2nd paragraph, and claim objections. The previously made objections to the claims and rejections under 112, 2nd paragraph have been withdrawn.

3. Amendment to the specification received 2/18/2009 has been entered. The amendments have been found to overcome the previously made objections to the specification. The previously made objections to the specification have been withdrawn.

Response to Arguments

4. Applicant's arguments with respect to claims 12 (now incorporated into amended claim 1) have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-2, 4-11, and 13-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent

protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation “a first and second flexible link”, and the claim also recites “particularly of the belt type” which is the narrower statement of the range/limitation. Further, claim 13 recites the broad recitation “a first helical connection”, and the claim also recites “particularly a screw thread or a helical cam path” which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888A1) in view of Anderson et al. (US 4,708,229).

As per claim 1, Wilder et al. discloses a transmission system comprising:

a first (20) and second (22) flexible link of the belt type, that couple a crankshaft (19) of a combustion engine (14) to a shaft (17) of an alternator- starter (12, [0026]);

a two-state coupling device (clutch 32 and clutch 38), wherein a first state of the two-state coupling device corresponds to a phase for starting the engine ([0029], the first state of the device is the starting phase of the engine in which the clutch 32 allows driven pulley 30 of the alternator-starter to freewheel or not transmit torque, and clutch 38 allows the driving clutch 28 of the alternator starter to transmit torque to the alternator-starter), in which the shaft of the alternator-starter drives the crankshaft of the engine with a first transmission ratio (transmission ratio corresponding to the ratio between driving pulley 34 of the engine and the driven pulley 30 of the alternator-starter), and a second state of the two-state coupling device corresponds to a phase in which the crankshaft of the engine drives the shaft of the alternator-starter ([0030]-[0031] second state corresponds to when the engine is started and the clutch 32 allows the driven pulley 30 of the alternator starter to transmit torque to the alternator-starter and clutch 38 allows the driving pulley 28 of the alternator starter to freewheel) with a second transmission ratio (transmission ratio corresponding to the ratio between driven pulley 36 of the engine and the driving pulley 28of the alternator starter), and wherein the first transmission ratio is higher than the second transmission ratio (Fig. 3) and

a first (30) and a second (28) pulley coaxial with said shaft (17) of the alternator-starter, wherein, when the two-state coupling device is in the first state, the first pulley is coupled to the shaft of the alternator-starter to provide the first transmission ratio, and wherein, when the coupling device is in the second state, the second pulley is coupled

to the shaft of the alternator-starter to provide the second transmission ratio ([0027]-[0031], [0042]),

Wilder et al. fails to explicitly disclose the two-state coupling device is arranged between the first and the second pulleys and includes at least one coupling element that moves longitudinally parallel to the axis of the shaft of the alternator-starter between two positions corresponding to the first and second coupling device states respectively.

Anderson et al. discloses a double acting clutch wherein a plate (40) is located between two pulleys (12 and 14) such that the plate is actuated longitudinally along the axis of the shaft (18) into engagement with one of the two pulleys (via friction material 32, 36) in order to selectively couple one pulley at a time to the shaft (18) while decoupling the second pulley such that it can freewheel by means of bearings (26, 28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wilder et al. to include the two-state coupling device is arranged between the first and the second pulleys and includes at least one coupling element that moves longitudinally parallel to the axis of the shaft of the alternator-starter between two positions corresponding to the first and second coupling device states respectively, for the purpose of selecting an appropriate method for engaging and disengaging the pulleys.

As per claim 5, Wilder et al. discloses the first pulley has a diameter smaller than that of the second pulley (Fig. 3).

10. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888A1) in view of Anderson et al. (US 4,708,229) and further in view of Mueller (US 4,526,257).

As per claim 6, Wilder et al. discloses the first (20) and second (22) flexible links are mounted to connect, respectively, the first (30) and second pulleys (28) to pulleys (36, 34) fastened to the crankshaft (19) of the engine (14, Fig. 3).

Wilder et al. fails to explicitly disclose grooves on the surface of a pulley fastened to the crankshaft.

Mueller discloses a variable speed accessory drive wherein a double pulley (Fig. 3) is attached to a shaft (38) driven by the crankshaft of the engine and wherein said double pulley has two sets of grooves (40, 44) for receiving a plurality of belts (42, 46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Wilder et al. to include a double pulley having grooves and fastened to the crankshaft of the engine, for the purpose of ensuring transmission of torque between the belt and the engine pulley.

As per claim 7, Wilder et al. discloses the first flexible link (20) is mounted between the first pulley (30) and a first pulley (34) of the engine, a second pulley (36) of the engine which receives the second flexible (22) link mounted between the second pulley (28) and the second pulley (36) fastened to the crankshaft of the engine.

Wilder et al. fails to explicitly disclose a double intermediate pulley fastened to the crankshaft and having two grooves for receiving the first and second flexible links.

Mueller discloses a variable speed accessory drive wherein a double pulley (Fig. 3) is attached to a shaft (38) driven by the crankshaft of the engine and wherein said double pulley has two sets of grooves (40, 44) for receiving a plurality of belts (42, 46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Wilder et al. to a double intermediate pulley fastened to the crankshaft and having two grooves for receiving the first and second flexible links., for the purpose of ensuring transmission of torque between the belt and the engine pulley.

As per claim 8, Wilder et al. discloses said first pulley (34) has a diameter greater than that of said second pulley (36, Fig. 2).

As per claim 9, Wilder et al. discloses a tensioning element (25, Fig. 1) arranged on a strand part of the second flexible link (22) between the intermediate pulley (pulleys of the engine) and the second pulley (28).

11. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888 A1) in view of Clark et al. (US 5,305,719).

As per claim 1, Wilder et al. discloses a transmission system comprising:

a first (20) and second (22) flexible link of the belt type, that couple a crankshaft (19) of a combustion engine (14) to a shaft (17) of an alternator- starter (12, [0026]);

a two-state coupling device (clutch 32 and clutch 38), wherein a first state of the two-state coupling device corresponds to a phase for starting the engine ([0029], the first state of the device is the starting phase of the engine in which the clutch 32 allows driven pulley 30 of the alternator-starter to freewheel or not transmit torque, and clutch

38 allows the driving clutch 28 of the alternator starter to transmit torque to the alternator-starter), in which the shaft of the alternator-starter drives the crankshaft of the engine with a first transmission ratio (transmission ratio corresponding to the ratio between driving pulley 34 of the engine and the driven pulley 30 of the alternator-starter), and a second state of the two-state coupling device corresponds to a phase in which the crankshaft of the engine drives the shaft of the alternator-starter ([0030]-[0031] second state corresponds to when the engine is started and the clutch 32 allows the driven pulley 30 of the alternator starter to transmit torque to the alternator-starter and clutch 38 allows the driving pulley 28 of the alternator starter to freewheel) with a second transmission ratio (transmission ratio corresponding to the ratio between driven pulley 36 of the engine and the driving pulley 28of the alternator starter), and wherein the first transmission ratio is higher than the second transmission ratio (Fig. 3) and

a first (30) and a second (28) pulley coaxial with said shaft (17) of the alternator-starter, wherein, when the two-state coupling device is in the first state, the first pulley is coupled to the shaft of the alternator-starter to provide the first transmission ratio, and wherein, when the coupling device is in the second state, the second pulley is coupled to the shaft of the alternator-starter to provide the second transmission ratio ([0027]-[0031], [0042]),

Wilder et al. fails to explicitly disclose the two-state coupling device is arranged between the first and the second pulleys and includes at least one coupling element that moves longitudinally parallel to the axis of the shaft of the alternator-starter between two positions corresponding to the first and second coupling device states respectively.

Clark et al. discloses a engine camshaft deactivation mechanism wherein two pulley assemblies (106 and 108, Fig. 14) are disposed on a shaft (14") and wherein between said pulley assemblies is a hub member (130) having a pair of friction disc members (132 and 134) which mate with friction discs (124, 112) disposed on the two pulley assemblies, wherein the hub member (130) moves axially along the shaft to engage the first or the second pulley assembly by mating between the friction discs (132 and 134) with the pulley friction discs (112, 124, Col. 6, Ln. 30-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wilder et al. to include the two-state coupling device is arranged between the first and the second pulleys and includes at least one coupling element that moves longitudinally parallel to the axis of the shaft of the alternator-starter between two positions corresponding to the first and second coupling device states respectively, for the purpose of selecting an appropriate method for engaging and disengaging the pulleys.

12. Claims 2, 4, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888 A1) in view of Clark et al. (US 5,305,719) and further in view of Man et al. (S 2002/0117860 A1).

As per claim 2, Modified Wilder et al. fails to explicitly disclose the coupling device comprises a means of detecting the direction of the driving torque so as to place the coupling device in its first or second state selectively.

Man et al. discloses a transmission system wherein a dual pulley is used (Fig. 4) wherein a first and second pulley (334, 321) of the dual pulley are configured to engage

with a separate belt, and having a two-state coupling device (309) which couples the first or the second pulley to the shaft depending on whether the engine is being started or is running ([0013] Ln. 14-19) and wherein the coupling device (309) comprises a means for detecting the direction of the driving torque ([0016] Ln. 1-9, means of detecting the direction is achieved through the design of the clutches) so as to place the coupling device in a first or second state selectively ([0095], [0096]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Modified Wilder et al. to include the coupling device comprises a means of detecting the direction of the driving torque so as to place the coupling device in its first or second state selectively, as taught by Man et al., for the purpose ensuring an smooth transition between the first and the second state).

As per claim 4, Man et al. also discloses the coupling device comprises a means placing the coupling device in its second state when the angular velocity of the shaft drops below the angular velocity of the second pulley ([0095] Ln. 7-10, 96, Ln. 1-4.the coupling device 309 utilizes overrunning clutches 322a and 322b, when the second pulley 321 in communication with the combustion engine 2 via a belt, begins to rotate at a speed or angular velocity greater than that of the shaft of the alternator-generator 303, the overrunning clutches 322a and 322b will lock and cause pulley 321 to engage alternator-generator shaft 303 so that it is driven by the combustion engine 2 and first pulley 344 will disengage).

As per claim 10, Man et al. also discloses the coupling device comprises a first (320a and 320b) and a second (322a and 322b) power transmission device, which can be disengaged ([0015] Ln. 8-9), which are mounted in opposition ([0016] Ln. 1-5, the clutches disengage or engage depending on the direction of the torque, whether from the engine or the alternator-starter, therefore they must be mounted in opposition to each other), the first between the shaft or continuation thereof and the first pulley (Figure 4, clutches 320a and 320b are located between the shaft 303 and the pulley 334), and the second between the shaft or continuation thereof and the second pulley (Figure 4, clutches 322a and 322b are located between shaft 303 and pulley 321) and fastening or unfastening the shaft and the corresponding pulley according to their relative angular velocities ([0095]-[0096], since the clutches coupled to the pulleys are overrunning clutches, whether the clutches engage or disengage is based on their angular velocities with respect to that of the shaft they are rotating about).

As per claim 11, Man et al. also discloses the disengagable power transmission devices each comprise a free wheel, the two free wheels (320a/b and 322a/b) being mounted in opposite directions ([0021] Ln. 7-9).

13. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888 A1) in view of Clark et al. (US 5,305,719) and further in view of Mueller (US 4,526,257).

As per claim 6, Wilder et al. discloses the first (20) and second (22) flexible links are mounted to connect, respectively, the first (30) and second pulleys (28) to pulleys (36, 34) fastened to the crankshaft (19) of the engine (14, Fig. 3).

Wilder et al. fails to explicitly disclose grooves on the surface of a pulley fastened to the crankshaft.

Mueller discloses a variable speed accessory drive wherein a double pulley (Fig. 3) is attached to a shaft (38) driven by the crankshaft of the engine and wherein said double pulley has two sets of grooves (40, 44) for receiving a plurality of belts (42, 46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Wilder et al. to include a double pulley having grooves and fastened to the crankshaft of the engine, for the purpose of ensuring transmission of torque between the belt and the engine pulley.

As per claim 7, Wilder et al. discloses the first flexible link (20) is mounted between the first pulley (30) and a first pulley (34) of the engine, a second pulley (36) of the engine which receives the second flexible (22) link mounted between the second pulley (28) and the second pulley (36) fastened to the crankshaft of the engine.

Wilder et al. fails to explicitly disclose a double intermediate pulley fastened to the crankshaft and having two grooves for receiving the first and second flexible links.

Mueller discloses a variable speed accessory drive wherein a double pulley (Fig. 3) is attached to a shaft (38) driven by the crankshaft of the engine and wherein said double pulley has two sets of grooves (40, 44) for receiving a plurality of belts (42, 46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Wilder et al. to a double intermediate pulley fastened to the crankshaft and having two grooves for receiving the first and

second flexible links., for the purpose of ensuring transmission of torque between the belt and the engine pulley.

As per claim 8, Wilder et al. discloses said first pulley (34) has a diameter greater than that of said second pulley (36, Fig. 2).

As per claim 9, Wilder et al. discloses a tensioning element (25, Fig. 1) arranged on a strand part of the second flexible link (22) between the intermediate pulley (pulleys of the engine) and the second pulley (28).

14. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888 A1) in view of Clark et al. (US 5,305,719) and further in view of Lanigan et al. (US 3,200,919).

As per claim 13, Clark et al. further discloses a longitudinally movable coupling element comprises a selector (130) with at least a lateral face (134) bearing a power transmission element (150 and 134 in combination transmit force/power) and facing a flank (112) of one of the first pulleys (106; Col.6 Ln. 32-35, Figure 14).

Modified Wilder et al. fails to explicitly disclose the selector includes a first helical connection, particularly a screw thread or a helical cam path collaborating with a complementary secondary helical connection fastened to the shaft of the alternator-starter.

Lanigan et al. discloses a reversible double-drive clutch in which utilizes a first helical connection (37; Col. 2 Ln. 13), particularly a screw thread, path collaborating (Col. 2 Ln. 15) with a complementary secondary helical connection (13) fastened to the shaft (12; Col. 2 Ln. 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of the Modified Wilder et al. to include a first helical connection, particularly a screw thread or a helical cam path collaborating with a complementary secondary helical connection fastened to the shaft as taught by Lanigan et al. for the purpose of reducing weight and the number of parts required by using a threaded connection between the coupling device and the shaft instead of using an actuator system or other means requiring extra gearing.

As per claim 14, Clark et al. further discloses an engine camshaft deactivation mechanism which the selector (130) has a first lateral face (134) facing a flank (112) of the first pulley (106) and bearing a first power transmission element (150 and 134 in combination transmit force/power), and a second lateral face (132) and having an end face (132) facing towards a flank (124) of the second pulley (108) and bearing a second power transmission element (132 and 150 in combination transmit force/power) consisting of a friction lining (132). In a second embodiment Clark et al. also discloses the selector bears at least one elastic return element (34, used in a first embodiment, Col. 3 Ln. 48- 49, Figure1, spring 34 is used to bias the), such as a spring, which exerts a pressing force to bias the selector away from the first pulley (10) and against a flank (16) of a second pulley (18) and also discloses a control element (30) able to move in translation parallel to the axis of said shaft (12; Col. 3 Ln. 45-46).

As per claim 15, Clark et al. further discloses an engine camshaft deactivation mechanism in which the selector (130) has a first (134) and a second lateral face (132) facing a flank of the first (106) and second (108) pulleys respectively (first lateral face

134 faces flank 112 of first pulley 106 and second lateral face 132 faces flank 124 of pulley 108, Figure 14) and which bear power elements (150). In a second embodiment Clark et al. also discloses an elastic return element (34, used in a first embodiment, Col. 3 Ln. 48-49, Figure1), which exerts a pressing force to bias the selector away from the first pulley (10) and toward a second (18), as well as a control element (30) able to move in longitudinal translation parallel to the axis of the shaft (12; Col. 3 Ln. 45-46), the control element having a lateral face facing (32) to wards a flank (16) of the second pulley (18) and bearing a friction lining and in that the selector bears at least one elastic return element (34, Col. 3 Ln. 48-49, Figure1), such as a spring, which exerts a pressing force to bias the selector away from the first pulley and toward the second pulley. Clark et al. does not explicitly disclose the control element 30 has a friction lining as control element 30 appears in the first embodiment (Figure 1) with toothed engagement 32 between control element 30 and flank 16 of second pulley 18 however, it could be understood that if the concept of control element 30 were applied to his first embodiment (Figure 14) and applied with respect to pulleys 106 and 108, the control element being part of selector 130 would engage in a similar manner as faces 134 with flank face 112 and face 132 with flank 124 each containing friction linings.

As per claim 16, Clark et al. further discloses an engine camshaft deactivation mechanism in which the selector (130) has a first (134) and a second (132) lateral face bearing a power transmission elements (150) and facing a flank of the first (106) and second (108) pulleys respectively (first lateral face 134 faces flank 112 of first pulley 106 and second lateral face 132 faces flank 124 of pulley 108, Figure 14). In a second

embodiment Clark et al. discloses a control element (30) rotating as one with the selector (selector in this embodiment comprising control element 30, piece 32, and spring 34, thus control element rotates with the selector as it is part of the selector) and which for any longitudinal position of the selector, generates a torque which is dependent on the relative angular displacement between the selector and at least one of the first and second pulleys (control element 30 generates torque when piece 32 is engaged with 16 or when it's closer to the second pulley, and generates no torque when it is closer to first pulley as it is no longer engaged to transmit torque).

15. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888 A1) in view of Clark et al. (US 5,305,719) and Lanigan et al. (US 3,200,919), and further in view of Mueller (US 4,526,257).

As per claim 17, Modified Wilder et al. fails to explicitly disclose the control element has an elastically deformable element which, at its longitudinal ends, has deformable regions which are in contact with said flank of the first pulley and said flank of the second pulley, respectively, at least when the selector is in one longitudinal position.

Mueller discloses variable speed accessory drive in which has an elastically deformable element which (86a), at its longitudinal ends, has deformable regions which are in contact with said flank (64)of the first pulley (44) and said flank (96) of the second pulley (40), respectively, at least when the selector is in one longitudinal position (Figure 3, the deformable regions of 86a are the points at which 86a comes into contact with

flank 96 and with flank 64 after crossing the gap between the two, these points are in constant contact with both flanks due to being attached directly to both flanks).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Modified Wilder et al. to include an elastically deformable element which, at its longitudinal ends, has deformable regions which are in contact with said flank of the first pulley and said flank of the second pulley, respectively, at least when the selector is in one longitudinal position, as taught by Mueller, for the purpose of biasing the pulleys to an engagement or disengagement position.

16. Claims 18-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888 A1) in view of Clark et al. (US 5,305,719) and Lanigan et al. (US 3,200,919), and further in view of Heimark (US 5,909,075).

As per claim 18, Modified Wilder et al. fails to explicitly disclose the control element has, on at least one lateral face, a magnetic element facing a complementary magnetic element borne by said flank of one of the first and second pulleys.

Heimark discloses a clutch for vehicle accessories in which a control element (Figure 1A is considered the control element assembly) has, on at least one lateral face, a magnetic element (20, Figure 1A, magnetic element 20 exists on both the left-most and right-most face of the control element assembly) facing a complementary magnetic element (28) borne by the flank of one of the first and second pulleys (32, Col. 4 Ln. 35-37, 39-41,46-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Modified Wilder et al. to include the control element has, on at least one lateral face, a magnetic element facing a complementary magnetic element borne by the flank of one of the first and second pulleys, as taught by Heimark, for the purpose of engaging the pulley and transferring rotational force between the pulley and the shaft (Col. 4 Ln. 38- 39).

As per claim 19, Clark et al. further discloses an engine camshaft deactivation mechanism in which the selector (130), on two opposite lateral faces (134 and 132, on opposite ends to the left and right of selector 130), a power transmission element (150), one of them facing a flank (112) of the first pulley (106), and the other facing a flank (124) of the second pulley (108).

Modified Wilder et al. fails to explicitly disclose the selector has an annular magnetic element arranged at its periphery and situated facing a complementary annular magnetic element fastened to the second pulley.

Heimark discloses a clutch for vehicle accessories in which a selector (Figure 1A) has an annular magnetic element arranged at its periphery (20, Figure 1A, magnetic element 20 exists on both the left-most and right-most face of the control element assembly) and situated facing a complementary annular magnetic (28) element fastened to the second pulley (32, Col. 4 Ln. 35-37, 39-41,46-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of the Man et al., Clark et al. and Lanigan et al. combination to include the selector has an annular magnetic element arranged at

its periphery and situated facing a complementary annular magnetic element fastened to the second pulley, as taught by Heimark, for the purpose of providing for a locking engagement between members at the proper engine phase crank angle (Clark et al. Col 2. Ln. 46-47).

As per claim 21, Clark et al. further discloses an engine camshaft deactivation mechanism in which the selector (130) has a first (134) and a second lateral face (132) bearing a power transmission element (150) and facing a flank of the first (106) and second (108) pulleys respectively (first lateral face 134 faces flank 112 of first pulley 106 and second lateral face 132 faces flank 124 of pulley 108, Figure 14) and a control element (30) able to move in translation with respect to the selector (12; Col. 3 Ln. 45-46).

Modified Wilder et al. fails to explicitly disclose the selector having on at least one lateral face a magnetic element facing a complementary magnetic element borne by a flank of one of the first and second pulleys.

Heimark discloses a clutch for vehicle accessories in which a selector (Figure 1A) having on at least one lateral face a magnetic element (20, Figure 1A, magnetic element 20 exists on both the left-most and right-most face of the control element assembly) complementary magnetic element (28) borne by a flank of one of the first and second pulleys (32, Col. 4 Ln. 35-37, 39-41,46-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Modified Wilder et al. to include the selector having on at least one lateral face a magnetic element facing a complementary

magnetic element borne by a flank of one of the first and second pulleys, as taught by Heimark, for the purpose of providing for a locking engagement between members at the proper engine phase crank angle.

17. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888 A1) in view of Clark et al. (US 5,305,719) and Lanigan et al. (US 3,200,919), and further in view of Seung et al. (US 4,662,861).

As per claim 20, Modified Wilder et al. discloses all elements of the claimed invention as described above, but fail to explicitly disclose the selector has a friction element, which is situated at its periphery and is in contact with an annular region of the second pulley.

Seung et al. discloses a two speed accessory drive in which a selector (250) has a friction element (258), which is situated at its periphery (uppermost periphery of 250, Figure 2) and is in contact with an annular region (256) of the second pulley (220).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of the Man et al., Clark et al. and Lanigan et al. combination to include the selector has a friction element, which is situated at its periphery and is in contact with an annular region of the second pulley as taught by Seung et al. for the purpose of engaging and disengaging the pulley.

18. Claims 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2003/0224888 A1) in view of Clark et al. (US 5,305,719) and Mueller (US 4,526,257) and further in view of Man et al. (US 2002/0117860 A1).

Modified Wilder et al. fails to explicitly disclose the coupling device comprises a first and a second power transmission device that can be disengaged and that are mounted to act in opposition, the first being mounted coaxially with the first pulley and the second being mounted coaxially with the double intermediate pulley.

Man et al. discloses a transmission system wherein a dual pulley is used (Fig. 4) wherein a first and second pulley (334, 321) of the dual pulley are configured to engage with a separate belt, and having a two-state coupling device (309) which couples the first or the second pulley to the shaft depending on whether the engine is being started or is running ([0013] Ln. 14-19) and wherein the coupling device (309) comprises a first (320a and 320b) and a second (322a and 322b) power transmission device that can be unfastened ([0015], the clutches are capable of disengaging) and that are mounted to act in opposition ([0016], the clutches disengage or engage depending on the direction of the torque, whether from the engine or the alternator- starter, therefore they must act in opposition to each other), the first being mounted coaxially with the first pulley and the second being mounted coaxially with the double intermediate pulley (Figure 4, first 320a and 320b power transmission devices are mounted concentrically and coaxially with the first pulley, second 322a and 322b power transmission device are mounted concentrically and coaxially with the second pulley, Figure 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Modified Wilder et al. to include the coupling device comprises a means of detecting the direction of the driving torque so as to place the coupling device in its first or second state selectively, as taught by Man et

al., for the purpose ensuring an smooth transition between the first and the second state.

As per claim 24, Man et al. also discloses the first (320a and 320b) and second (322a and 322b) disengagable transmission devices each comprise a free wheel ([0096] Ln. 2-3, transmission devices are described as "overrunning clutches" which are the same thing as a freewheel).

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA MOMPER whose telephone number is (571)270-5788. The examiner can normally be reached on M-F 6:00-3:30 (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley T King/
Primary Examiner, Art Unit 3657

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